# APPENDIX C

# TROUBLESHOOTING STEAM PRESSURE PUMPING SYSTEMS

| *Symptom* | *Probable cause* | *Remedy* |
|---|---|---|
| Unit fails to fill: | | |
| Increase in liquid level in receiver, possible flood in receiver. | Obstruction in fill line, valve closed, swing check backwards. | Inspect fill line for closed valve, swing check installed backwards, or obstruction in fill line. Refer to assembly and parts list. |
| Increase in liquid level in receiver, possible flood in receiver, in crease in receiver pressure. | 3-way valve assembly leaking. | Inspect valve assembly. |
| Receiver empty, level fluctuating. | Receiver pressure greater than pressure in discharge line. | If unit has been in operation for a period of time without problems, check for traps blowing through. If new installation, receiver pressure may be greater than anticipated; back pressure may be less than anticipated. A 2-way control valve may be required in discharge line |
| Unit fills too slowly or 3-way valve will not deenergize: | | |
| No liquid level in receiver. | Load to unit not as great as anticipated. | No action required. |
| Receiver flooding. | Obstruction or restriction in fill line. | Inspect fill line for partially closed valve. Inspect fill line for proper size fittings and pipe. |
| | Restriction in vent line, 3-way valve assembly out of adjustment. | Inspect vent line for partially closed valve, proper size fittings and pipe. Inspect 3-way valve assembly. |
| Unit fills very rapidly: | | |
| Unit cycling almost normally, receiver flooding | Defective check valve in discharge line. Back flow to system. | Inspect discharge check valve. |
| Noise in or at fill line check valve: | | |
| Vibration and water hammer at fill line check valve. | Cold condensate. | Inspect for cold condensate. Throttle flow control valve, ahead of 3-way steam valve assembly. |
| Unit discharges very rapidly: | | |
| Water hammer. | Motive pressure too high. | Throttle flow control valve. |
| Receiver flooding, rise in receiver pressure during discharge. | Defective check valve in fill line. Discharging condensate back into receiver. | Inspect fill line check valve. |

| *Symptom* | *Probable cause* | *Remedy* |
|---|---|---|
| Unit discharge cycle too long: | | |
| Possible receiver flooding, discharge time greater than 30 seconds. | Flow control valve throttled too much. | No action required if receiver not flooding. If receiver flooding, adjust flow control valve for dis charge of approximately 24 seconds. |
| Rumble and vibration from unit chamber, possible receiver flooding, discharge time greater than 30 seconds. | Cold condensate. Unit may be sized for future requirement. Condensate sub-cools. | Inspect for cold condensate. Throttle control valve slightly. If unit sized for future load, extend length of short electrode. |
| Receiver flooding, discharge time greater than 30 seconds. | Restriction or increase of back pressure in discharge line. | Inspect discharge line for partially closed valve(s), obstructions or change in pressure. If pres sure increases, may require adjustment of flow control valve. |
| No steam flow. Receiver flooding. | Steam supply failure, obstruction in steam supply line, | Inspect for supply steam pressure, closed valve or obstruction in steam supply line. Inspect strainer. |
| 3-way valve noisy. | Condensate in steam supply line. | Inspect steam supply line for condensate. |
| Receiver pressure increase during discharge. | 3-way valve out of adjustment. Steam leakage into receiver. | Adjust valve. |